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MANUAL

FOR THE USE OF THE

REACTIONARY LIFTER

IN THE SYSTEM OF

CUMULATIVE EXERCISE

COMMONLY KNOWN AS

THE HEALTH-LIFT OR LIFTING CURE.

ELEVENTH EDITION.

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THE HEALTH-LIFT COMPANY.
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ALTHOUGH this pamphlet is primarily intended to explain and illustrate THE REACTIONARY LIFTER, special attention is given to the System of Exercise for which the apparatus is particularly designed, without a knowledge of which system its beneficial use must necessarily be limited.

It is believed that the following pages present intelligibly the mode of operation, and the causes of the results, of this, the most valuable form of Physical Exercise for the preservation and restoration of Health.

46 EAST 14TH ST., NEW YORK, 1876.

AGENTS WANTED.

A REPUTABLE, agreeable, and lucrative in-door business of permanent and increasing interest, already in successful operation in many cities, where it is endorsed and patronized by many of the most prominent residents, may be established with a moderate capital in any city or town.

It is especially adapted to Physicians, or those having Medical Knowledge or taste, or to those interested in Physical Culture ; but may be conducted by any one.

For detailed information

ADDRESS

HEALTH-LIFT COMPANY,

46 East 14th Street,

NEW YORK

THE REACTIONARY HEALTH LIFT has now reached perfection. In the development of a machine requiring such perfect accuracy of adjustment, there would naturally be room for much change and improvement. The Health Lift Company, knowing that they had secured the best machine, and that their patents covered and secured all the best and available principles that could be utilized in lifting, so that there could arise nothing in future that could supersede it, have, by their capital, energy, and valuable co-workers, succeeded, after five years' of persistent labor, in producing a perfect piece of mechanism, which is entitled to be classed among the greatest inventions of the age.

Although the essential feature has from the beginning been retained, there have been five different varieties of machine made with many changes. It will serve our purpose here to mention a few only of the more important ones. The castings are all of the finest and best quality of iron, made fine and smooth by special process, so as to take on a durable polish. The steel is of the best quality, and made especially hard for this purpose. Several of the parts which were formerly made of brass and gray iron are now made of malleable iron. The shape has been made beautiful and graceful. Instead of weighing 155 pounds, as formerly, it now weighs but little over 100 pounds, and is stronger. It is made portable by being on castors, and the handles or sleeves letting down for moving or packing. Instead of being painted brown or green, it now receives four coats of japan, each coat baked on for twelve hours in a temperature of over 400°. By its new roller, scale, and self-locking slide the adjustment is made perfect and simple, and will not allow the slide to slip or get out of order. The scale is now cylindrical instead of flat, and receives a coat of waterproof varnish, so that if it gets soiled it may be cleaned by use of a dampened cloth. The lever being made of different and harder steel, and the toe-steel—the key which locks the movable fulcrum—being oval, will not now slip, nor allow the platform to tilt.

Perhaps the most important change of all has been the perfection of the handle. One of the greatest practical objections to the lifting exercise for a long time was its severity upon the hands, the handles formerly in use, and even now on most other machines being simply oblong pieces of wood, with perpendicular surfaces for the palms, by which the weight was thrown mainly on the fingers, producing painful bruises, blisters, and callouses, besides stiffening the joints and destroying all delicacy of touch. After much study and experiment, it was finally found that, by inclining the palmar surface of the handle at an outward angle from the line of traction, the weight could be thrown

largely on the fleshy cushions of the palm, and the fingers thus greatly relieved from pressure. This was an immense step toward popularizing the exercise, since it made it practicable to certain classes of the community who would otherwise have been deterred from its use.

Formerly these handles were covered with chamois skin, which, after much use, wore out or peeled off. They also necessitated the use of liquid rosin for heavy weights. This was a great inconvenience and trouble, and a serious drawback to the use of the machine. This very serious objection is now entirely overcome by an improvement in the shape of the handle, and a covering of finely corrugated rubber. These changes remove every possible objection to the handle. With each machine we now send a pair of buckskin gloves, which should be used with the new handle, and those having delicate skin, or soft, fleshy hands, will thus avoid every difficulty or objection. These handles will not get out of order, and ordinary use will not wear them out. If anything of the kind should occur, they can easily be remedied by application to us. *We will supply the new handles GRATIS* to former patrons on application by letter or in person. We will supply the Gauntlet Buckskin Gloves to those who desire, by mail, at the wholesale cost, which is 75 cents. As this handle is the only suitable one that can be utilized in lifting, the inventor had it patented. The Health-Lift Company, having purchased the patent at a cost of several thousand dollars, have secured the exclusive right to use this only available handle, and any infringement by inventors of other machines will be prosecuted.

IN CONCLUSION

It seems desirable to call your attention to the fact that this Company are the sole Licensees under the Patent for the manufacture and sale of the best Apparatus, for this System of Exercise, which

Is more easily adjusted ;—

Has a Wider Range of Weights ;—

Possesses a more Uniform Action ;—

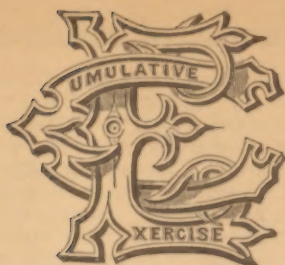
Is more Portable, Compact and Ornamental ;—

Is more Convenient for Ladies' Use (requiring no Change of Dress) ;—

Is used with the Body in a Natural Position (avoiding any Twist of the Spine) ;—

Is Cheaper than any other Good Machine.

Being a perfect machine, and the only good one extant, it has superseded all that have yet been introduced, and will as certainly take the place of any that may hereafter be put upon the market.



CUMULATIVE EXERCISE,

POPULARLY KNOWN AS

“THE HEALTH-LIFT,” or “LIFTING CURE.”

While improving the health, will **Double the Actual Strength** in three months:—occupies only **Ten Minutes** once a day:—furnishes a safer and more valuable mode of **Physical Training** than the gymnasium:—is adapted to both **Ladies and Gentlemen**, requiring no change of dress:—does not fatigue nor exhaust, but, by equalizing and improving the **Circulation of the Blood**, refreshes and invigorates:—and, finally, is daily recommended by leading Physicians to those suffering from want of tone and vigor, or from Dyspepsia and other forms of Indigestion, or from various diseases of the Nervous System, or from the class of ailments caused by torpor or congestion of the Liver—in short, it is warmly approved by the **Medical Profession** as the most **Efficient, Safe and Simple Means** of preventing Diseases arising from Sedentary Habits.

THE REACTIONARY LIFTER is the response which science and inventive talent have made to the demand for an instrument which would make this Exercise popular and convenient. It is a portable, compact and graceful apparatus for taking Exercise in the safest and best possible manner.

CUMULATIVE EXERCISE.

THE essential principle of Cumulative Exercise, the basis of The Health-Lift, or "Lifting Cure," is the gradual arousing of the latent muscular strength of the individual.

It is a system of voluntary effort in which the person, in each day's exercise, begins with a light weight, sufficient only to exert a few muscles, and gradually increases his efforts as he arouses the neighboring and deep-seated muscles to activity. By this course, effects are produced which differ materially from those caused by ordinary exercise or by gymnastic feats. Instead of exciting a tumultuous throbbing of the heart, and a hurried, panting respiration, such as follow unusual exertion in the ordinary methods, the heart's action is rendered more efficient, and consequently, slower and steadier, while the breathing is deeper, fuller, and more regular. The exertion is made with the body erect, but the knees bent at beginning, so that, in effect, the straightening of the knees produces a *gradual tension of the muscles*, as the weight is raised, which is essentially different from ordinary lifting, and *free from its dangers*.

This tension or contraction of the muscles is one of the most efficient agencies in promoting the circulation of the blood in the minute blood-vessels (the capillaries) and in the veins; and, through this improved circulation, disease, arising from congestion or inaction of the various vital organs, is relieved, and often permanently cured.

While ordinary exercise generally causes fatigue and exhaustion, a judiciously-conducted Cumulative Exercise is always followed by a sense of buoyancy, freshness and invigoration. This arises from two causes: first, not merely a few superficial muscles have been used over and over again, as in ordinary exercise, but the *great bulk* of the muscles in the entire body has been safely and systematically caused to contract in a slow, gradual, natural manner, by the successively increased efforts and alternations of rest. This gradual, natural contraction, with the proper intervals of relaxation, never causes fatigue or exhaustion.

The second cause of this positive buoyancy and freshness is the INCREASED ABSORPTION OF OXYGEN by the contracting muscles. While muscles are acting they absorb from the blood flowing through them over SIX TIMES as much oxygen as they do when at rest. This fact explains not only the temporary effect under consideration, but the permanent, valuable results which follow the regular, persistent use of this system of exercise.

Oxygen we all know to be the great sustainer of animal life. Its proper supply to, and absorption by, the various tissues of the body are absolutely essential to their healthy condition and action. And, in thus securing its six-fold increased absorption, not by a few, but by the majority of the muscles, an increased demand is made on the respiratory capacity, which results in a more thor-

ough elimination of poisonous gases and waste matter, a more perfect aeration of the blood, and a more vigorous, healthy tone of all the vital processes.

THE RATIONALE OF LIFTING.

LIFTING is a system of harmonious and simultaneous exercise of the whole body. Every muscle is brought into use at once, and each in proportion to its relative strength. And so connected are the vital organs with the muscular tissue of the body, that when all the muscles simultaneously and harmoniously act, the organs themselves receive their appropriate amount of exercise. So distributed is this effort that there is no danger of injurious strains or rupture. It strengthens the weak organs, and expels disease by a gradual, co-operative exercise of the whole body. The strength of the whole body is augmented and equalized, the weak parts are built up, disease is expelled, and the individual becomes uniformly strong, and consequently healthy. It develops power chiefly at the vital centers. All the voluntary and respiratory muscles are brought into harmonious play, expanding the chest, augmenting the breathing capacity, aerating the blood, equalizing the circulation, warming the extremities, and thus vitalizing every part; and by determining action and circulation to the whole surface, increasing the relative amount of blood in the extreme capillary vessels, thereby removing internal congestions wherever located, and accelerating the nutrition of every organ. When these reasons are fully understood, the fact that many persons have, by the simple process of lifting more than doubled their strength in three months, will not be surprising.

It is a true exercise, a correct developing agency, a safe method of cure. It is an equalizer and invigorator—a reconstructor of the tissues of the body and brain. It invokes all hygienic agencies, especially pure air, pure water, healthful food, sun, air, and water baths, abundant sleep, rest and recreation. It increases the healthy action of the brain correspondingly with that of the body. All the elements of a perfect manhood are increased, including not only intellectual vigor, but moral power and social purity. For as certainly as disease favors an abnormal condition of the mind as well as the body, so surely does an increase of health and strength become a promoter of virtue. In a word, it is putting a man in possession of himself.

LIFTING EXERCISE AS A REMEDIAL AGENT.

“**T**HE first result of exercise is to equalize, the second to invigorate, the third to reconstruct and build up the tissues of the body. In the process of constant training these results

are inevitable, and they necessarily involve the expulsion of whatever disease is present in the system."

"The skin, which had been clogged with decaying matter, yellow with bile, or white for lack of capillary circulation, acquires the natural glow and color of health. The face becomes fuller and rounder in its outlines (the uniform and natural indications of vigorous vital organs), and acquires that beauty of form, and lively, animated expression, which can only result from healthy physical, moral and mental conditions."

"Nor is the effect, tone and character of the mind and will less apparent. The vacillation and weakness peculiar to an unbalanced condition come to an end. The step is firm, and the will determined. Consciousness of power underlies and promotes all the elements of a perfect manhood and womanhood. Persons who vainly grappled with health-destroying habits, or who, in consequence of the weak and abnormal condition of their mental faculties, have had no desire to resist them, may now oppose them successfully."

"The system is purified from disease; the morbid matters—sure contagion, fever, and premature death—are expelled from the system; the patient, instead of being weaker, is made stronger by the process, and is protected against relapse and subsequent assaults of disease by his greater degree of organic power. His vigor of mind and body is greatly increased, and he enters upon his daily duties anew, with prospects of longer life, business success, and greater usefulness in whatever avenue he may enter."

"The curative power is inherent in the human organism. It is by developing and increasing this power by a correct system of physical culture that a cure is effected. In spite of our constant transgressions of nature's laws, she is ever striving to neutralize the effects of our errors, and to make us wiser and more healthy. We have only to meet nature half-way to become constant in progress toward physical, mental and moral perfection."

"He who desires the best results will be constant in his obedience. In the attainment and preservation of health we reap as we sow."

"Nature cures disease through an inherent recuperative power in the human system."

"By furnishing the conditions for the action of this recuperative power alone can nature be aided."

"The conditions are, essentially: Pure Air, Proper Food, Cleanliness, and *Judicious Exercise*."

THE "REACTIONARY" IN DISEASE.

CUMULATIVE Exercise can hardly be called a system of medical treatment, nor does it interfere in any way with the various schools of medicine extant. While it is used in specific

cases, and without doubt is more applicable to some than to others, yet it does not make a specialty of any form of disease. **Exercise upon THE REACTIONARY LIFTER** is of such a distinguished and harmonious character, that the affected portion of the system first feels its effects. If one is afflicted with any weakness or disease, the seat of the difficulty will be the first to respond to the effort at lifting. One man will feel the exercise in his back, another in his liver, while the kidneys of the third are excited. It is from this fact that the lifting exercise is very useful as a means of diagnosis. Care should be taken not to attach too much importance to particular feelings which are experienced at the first use of the instrument, since these are often caused by little irregularities of position. But when one is familiar with the position and the exercise, he will invariably find that the weak portions of his body feel it most when he lifts.

The first apparent effect of lifting will generally be an aggravation of one's difficulties. An unusual degree of action is excited, and some pain caused. This rule is almost universal. Hundreds of cases might be cited exhibiting the truth that through pain one advances from disease to health. This, however, lasts but a short time. Soon the feeling of vigor and health succeeds that which was painful, and the cure follows. And such a cure is real, being the effect of the action of one's vital forces, and by no means an excitement of some medicine.

These cumulative effects succeed each other in a series of what, for want of a better name, have been termed "*crises*." With the increased action in all the various functions, induced by the improved vigorous circulation, there would seem to be an occasional diversion of vitality to some organ or region which is below its normal condition,—which is, in short, diseased. And the pain or discomfort thus occasioned is produced in the same way and followed by the same results as in the case of a frozen finger. While the circulation is imperfect or suspended by the action of the cold, there is no pain, absolutely no sensation of any kind. Vitality is lost, death is taking place. But as the circulation is renewed, and the tissues respond to the stimulus of the healthy, living blood, tears start to the eyes at the pain which is the accompaniment of returning life and health.

Too much stress can hardly be laid upon these axioms:

The Blood is the Life:

Its perfect Circulation is perfect Health.

They are the basis of the system of Cumulative Exercise; they explain all its results; they satisfactorily account for its wide applicability; they are an epitome of Medical Science.

AND **THE REACTIONARY LIFTER**, as applied and used in this system of exercise, through its effects on this circulation of the blood, we honestly believe there is more value, not only in the preservation of health but in its restoration, than in any other one agency with which we are acquainted.

THE REACTIONARY LIFTER

is a convenient instrument for taking all needed exercise in the safest and best possible manner.

Its Weight is little over 100 pounds, and when packed it is about the size of an ordinary trunk.

Its Cost is one hundred dollars.

Convenience in Handling—It can be easily transported from place to place, or trundled about the house on its castors.

Appearance and Convenience about a House—It is ornamental and graceful in appearance, and may be placed without inconvenience in a hall, study, office, bedroom, or parlor. Its handles let down so that it may be easily rolled under a table or bed if desirable.

Construction—It is made of steel and iron, and is so compactly and firmly put together that it will not break or wear out, and is not likely to get out of order. It is japanned to save it from rusting, and is beautifully finished in black and gold.

Its adjustment for lifting consists in the movement of a slide, and is so simple that a child can readily understand and manage, and so easy as to require neither time nor effort.

It is available for both sexes, and should be used by all the members of the family.

Time Required—Only ten minutes once a day is all that is required for all needed exercise on this apparatus.

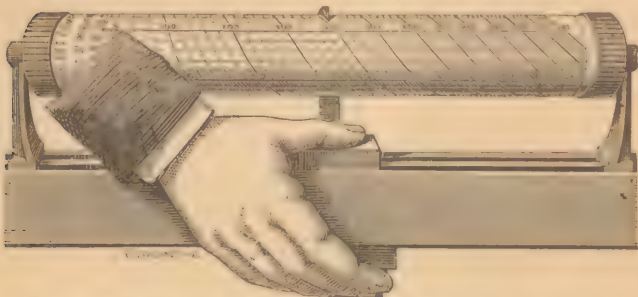
CASTORS should be inserted into the sockets for them in the bottom of the machine.

The dress-shield, or guard, curving over the yoke in the centre of the machine, was devised to prevent ladies' dresses from being caught between the levers. It may be removed or inserted at pleasure by turning it side-wise.

Preserve the publications for future use and reference.

TO PREPARE THE LIFTER FOR USE.

TO move the slide, place the thumb on top and the fingers below (as shown in the engraving), *lift up and tilt back*.



Find your own weight in the column of figures of "Weight of Person Lifting;" turn the cylinder until the *straight line*

leading from your own weight is at the end of the index on the slide.

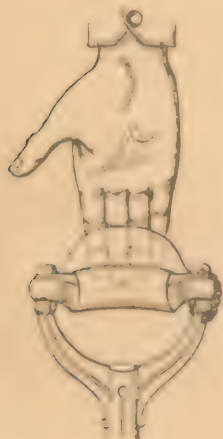
Now move the slide along the lever until the index rests at the *curved* line whose figures correspond with the number of pounds you desire to lift. These *curved* lines are numbered consecutively 20, 40, 60, 80, 100, 120, up to 1200; and the index, moved along the *straight* line of the lifter's own weight, shows successively the weights to be lifted as it rests at the intersection of the *curved* lines.

In the engraving the index touches the intersection of the *straight* line leading from 100 (in column of figures of "Weight of Person,"), with the *curved* line of 400. This shows the amount of weight a person weighing 100 pounds, standing on the platform, would have to lift in order to raise himself. If he moves the index to the next *curved* line he would have to lift 420 pounds, each *curved* line representing 20 pounds more than the one on the left.

There is no fastening of the slide necessary, as it is self locking; it cannot be moved while a person stands on the platform.

ADJUSTMENT OF HANDLE RODS.

RAISE the handles to the perpendicular; step upon the platform, stand erect, with arms hanging at the sides, fingers extended. The edge of the handle-back should lap over the second joint of the middle finger, as shown in the engraving.



The handle-sleeves are slotted and have figures cast upon them at equal distances. In this slot an index is carried up or down by the screwing or unscrewing of the sleeve. After having ascertained the proper length of the handle-rods as above directed, the figure opposite the index will be the guide for its future adjustment. After each lift, of the series for the day's exercise, unscrew the sleeve one complete turn, making the rod about one-quarter inch longer for each succeeding lift. But commence the next day's lift as before.

The handle-rods should be the same length, as nearly as may be; although the action of the yoke, or cross-bar connecting the side-arms, will correct any ordinary discrepancy. This yoke is quite an important feature of the machine, as by its action the weight of person is divided equally

between the two sides of the body, thus ensuring a symmetrical development.

Notwithstanding the above explanation, difficulty is often experienced in the adjustment of the handles. This, together with the importance of having the handles just the right length, leads us to offer still another explanation. Generally speaking, in *commencing* the exercise, a lady of ordinary height should have the handles at 6 or 7, while a gentleman should have them at 4 or 5. A very short or young person may commence with the handle at 9, while a very tall person should commence at 2 or 3.

Turning the handles to the right *shortens* them. Turning them to the left *lengthens* them. They should be lengthened one turn after each lift, when the weight is above 200 pounds.

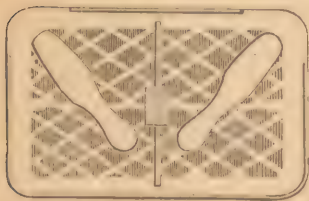
MODE OF LIFTING.

THE machine being now ready, the lifter assumes the proper position for the effort. Correct position is of the *first importance* in this system of exercise, and the most careful attention to the following details is imperative.

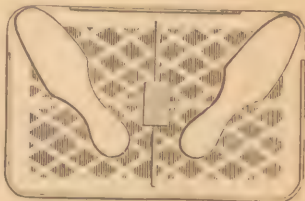
Feet—The feet should be placed on either side of the centre of the platform, with the toes turned well out. This brings the legs, in their action, into the form of the arch.

Ankles—The ankles must be in line with the centre of the platform. They should be from five to seven inches apart, and equidistant from the centre piece. As the weight is taken through the foot, the effect of the lift depends very much upon the position of the ankles. Little variations in the position of

Observe these same marks on platform of your machine.



Showing position of ladies' feet on platform.



Showing position of gentlemen's feet on platform.

the feet call forth different sets of muscles in the effort to keep the body in erect position. When the weight is taken through the ankle and thence through the centre of the foot, the muscles are more symmetrically exercised in the effort. Or, to be more specific, the ankles should be opposite the little "nuts" which bind the two levers to the upright, in the centre of the platform, the toes pointed to the corners of the platform. This will bring the

gentlemen's toes flush with the edge of the corners, and the ladies' not quite so far out, though pointing in the same direction. The "cut" on p. 14 will make this important point still more plain.

Hips—The hips must be in a direct line between the ankles and shoulders. This is an important direction. Most persons place their hips forward of this line. This is illustrated in Fig. 1. The hips here being out of the line of the lift, the harmony of the effort is destroyed. It brings an unnatural and injurious strain upon the back. The hips should be kept well back, yet not too far back, as in Fig. 2. To lift any great weight in this position would prove very injurious.

Chest—The chest should be thrown forward, round and full, while the lungs should be moderately inflated. Never lift with exhausted lungs; yet it has also been found that too much inflation is not the best condition for this effort.

Shoulders—The shoulders should be thrown back as far as possible. Care should be taken that they do not stoop as in Fig. 3. Nor should this be accomplished by throwing the hips and abdomen out, as in Fig. 1. They are thrown back relatively to the chest, but not in relation to the whole body, as in Fig. 4.

Head—The head should be erect and eyes to the front. This position of the head materially assists the shoulders. To look down at the machine throws the shoulders out of position,



Fig. 1.

Incorrect.
Hips too far
forward.



Fig. 2.

Incorrect.
Hips too far
back.



Fig. 3.

Incorrect.
Head down,
Shoulders for-
ward.



Fig. 4.

Correct
position,
though the Hips
should be
further back.

The pelvis should
have placed the hips
much further back in figure 4

as shown in Fig. 3, while the correct position of the head is shown in the engraving *Ready to Lift*.

Having thus secured the correct position, bend the knees forward and *outward*, as shown in the following :



READY TO LIFT.

Grasp the hand-pieces with the palm of the hand outside, and *well under*, so as to throw the weight upon the fleshy-cushioned palm, rather than upon the bony fingers. The illustrations on the opposite page show the mode of grasping the handles.

The action is now begun by a slow, steady effort to straighten the knees whilst the body is perfectly erect, with the arms extended to their full length. Do not hurry—make no jerking effort—but keep the attention concentrated on the straightening of the knees and the uprightness of the body. If you *jerk* the weight up by the arms and sudden, rapid action of the muscles of the legs, you cannot help pulling the body out of line, first backward and then forward, and run great risk of straining or overtaxing some of the trunkal muscles. But by the slow, mechanical contraction of the extensor muscles of the legs, the weight will be so gradually thrown on the trunk that strain or injury is impossible.

One only needs to observe this figure to see that any weight which the hands can sustain without slipping may be borne with impunity by the body in this position. The points of support are directly in line, with the weight suspended through the line of greatest resistance; and the muscles of the trunk are equally and symmetrically exercised, both back and front, and on each side, in preserving the perpendicular of the bony columns.

As soon as the knees are fairly straight, with as little pause or break in the motion as possible, gradually bend them again, still preserving the upright position of the body and head, until the platform is at rest again and the weight entirely released.



In lifting one's heaviest amounts there arrives a moment when every possible power of the muscles must be put forth. In order to do this with the greatest effect, lift *at* the weight until every muscle is tense, and every joint is nearly straight.

Then lift. Every slightest effort then tells on the weight and helps to raise it. Every attempt to lift very heavily before that point is reached is partially lost in straightening out



LIFTED.

muscles and joints. This, however slight it may be, acts very much like a slack in a tow-line which must be pulled out before every pull of the tug properly affects the ship.

WHAT AND WHEN TO LIFT.

IN a general way, the rules for proportions of weights in each effort, and the duration of rests between the efforts, may be thus stated:

On beginning the exercise, and for the first two or even three months, the first weight of each day's exercise should be about FIFTY per cent. of the amount intended to be raised at the final effort. This should be followed by a rest of about ONE minute. During this rest the weight is increased to about SEVENTY-FIVE per cent. of the final weight. After lifting this, rest about TWO minutes. Increase the weight to NINETY per cent. of final weight; lift and rest about THREE minutes, after which make the supreme effort with the full amount.

For example—One proposes to lift for his last weight, which, of course, should be his heaviest—say 500 pounds. He would begin at

50 per cent. of 500, which is . . . 250 pounds.

REST—*one minute*. Then lift

75 per cent. of 500, which is . . . 375 pounds.

REST—*two minutes*. Then lift

90 per cent. of 500, which is . . . 450 pounds.

REST—*three minutes*. Then lift the full amount. And this constitutes the entire exercise for the day.

The next day, begin as before: first weight, one-half the total amount to be lifted; second, about three-quarters; third, about nine-tenths, and finally the entire weight—with the proper intervals of rest between each effort.

At beginning, and until familiar with the foregoing rules, so that the correct position is assumed readily, it is not well to lift to the limit of one's strength. Ladies, in average health, may begin by lifting from 40 to 80 pounds, and gentlemen from 150 to 300 pounds. As a general rule, ladies, in health, begin with 60 pounds for the maximum weight, and gentlemen about 200 pounds.

Hasten slowly is a good rule. Ladies may add five pounds daily for the first month, afterward five pounds every second or third day. Gentlemen will add 10 pounds daily from 200 to 300. Five pounds daily from 300 to 400. Five pounds every other day from 400 to 500, and five pounds once or twice a week after this.

One more caution: There is a limit of capacity to all. Some will attempt to exceed this limit. For a lady to reach 300 lbs. is an accomplishment with which she should generally be content. Some few have lifted five hundred, and even more.

As a general rule gentlemen will reach 600, and stay at that point for some time. It is a good hit. Generally it is enough; though many far exceed it with impunity.

The broad, general rule for the amount of weight is this: *That weight is the most beneficial which is followed by the maximum sense of buoyancy, freshness and invigoration. Any weight which is followed by a sense of fatigue or exhaustion, is injurious.*

Up to 500 pounds, four lifts or gradations are sufficient. From 500 to 600 pounds take five lifts; above 600 six lifts should be taken. *If an invalid*, it is important to commence with a very light weight, proceed very gradually, and stop short of too much.

So, also, as to periods of rest between each lift. The rule above given is based on the majority of cases. But there are

some exceptions in which the duration of each rest may be beneficially lengthened, even to double the time.

These **RESTS**, whether long or short, are very important. They give opportunity for that complete change in the circulation and re-action to the whole system which is a necessary and important result of this exercise. It is a custom with some to lift their four or more weights in rapid succession, or to lift the maximum weight several times, and other irregular modes. The rules given throughout the book are the result of much observation and years of study and experience, and the best results will be obtained by a strict observance of them.

The exercise should be taken as regularly as possible, once a day, and about the same hour of each day. This is more necessary at first than afterwards. In case it is not convenient to lift every day, two or three times, a week will often be found beneficial. The best hour for lifting is a few hours after breakfast or toward night, after the work of the day has been accomplished: or even upon retiring for the night. It will be found also useful at any hour when in a state of nervous prostration, or wakefulness, or headache, to resort to this for relief.

The ability to lift oneself, and yet lift more than your own weight, is a seeming paradox or impossibility, and yet is made simple by an understanding of the rules of leverage. By study and use of this machine the fact is apparent.

The weight is obtained—that is, made more or less by shortening or lengthening the leverage—by use of a movable fulcrum.

There is no direction in this book more important than this: *Raise and lower VERY SLOWLY, and wholly by the ACTION OF THE KNEES.*

The machine should have honorable position. If placed in an out-of-the-way place there will be a tendency to neglect it or to use it irregularly. What article of the household is more useful or indispensable? The new machine, as now finished, is beautiful enough for any drawing room.

The exerciser should follow these directions at first with the utmost care. When this instrument is used in incorrect modes, or when thoughtlessly exercised upon for mere amusement, it may fail to do good. The blame for this should not be attached to the instrument. We cannot be responsible for its abuse. Yet when one becomes familiar with the position and mode of exercise, it becomes as easy as any of the actions of his life, requiring no more care or mental effort than walking or running.

Perseverance in the use of **THE REACTIONARY LIFTER** is necessary in order to derive the benefit that should be obtained from it. Its cures are effected by the orderly action of the vital forces, and not by any sudden and miraculous influences. The action of these forces, like all other operations of nature, is steady, sure and permanent. And those who persevere in its use, and exercise upon it in accordance with proper instructions, will reap the greatest amount of benefit.

The class who most need exercise, especially this form, and who would be most benefited by it, are the least liable to seek it. We speak of Ladies.

We are sure that this arises from a want of knowledge of what it is, and what are its effects. They imagine "ungraceful positions," "handling of heavy weights," "soiled hands," and "change of costume."

Let all such fancies be dispelled by examining the accompanying "cut."



This lady is seen to have on her outside garment, hat, and even gloves. She has gone through no transition. She steps upon the platform, grasps the handles, and lifts in the simplest possible manner. There is no effort, no strain, no possible chance of any injurious effect. One of the great advantages of this apparatus is its adaptation for ladies' use.

But there is another consideration far more important than any of the above. This is its marked effect upon the diseases peculiar to women. This exercise has had a more specific effect than anything yet known. "Back-Ache, its Cause and Cure," and "The Health-Lift Reduced to a Science," both sent free on application, will be found to contain full particulars pertaining to its great advantage to women.

When it is understood that a very large share of the suffering endured by women in this country, both single and married, arises from inertia, from muscular weakness, from a want of tone and health in the muscles themselves, both local and general, and that the remedy lies in improving the muscular system by judicious systematic Exercise, is it not a sad reflection upon the general good sense of women that there is such universal apathy on this whole subject?

DIRECTIONS.

GENERAL.

In every part of the Lifting Exercise, it is exceedingly important that you observe the following directions:—Let every movement be slow, steady and gentle; turn the toes well out, heels near together, and in a direct line under

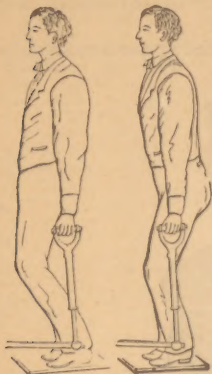


Fig. 1.
Incorrect.

Fig. 2.
Incorrect.

the spine, which should be in a perfectly straight line, with the shoulders well drawn back, chest out, hips back, lungs moderately inflated, mouth closed, *raise very slowly, and wholly by the action of the knees, without exerting the arms or shoulders a particle.*

Lower as slowly as you raised, by bending the knees, keeping the body in the same position till the lift act is fully accomplished.



Fig. 3.
Incorrect.

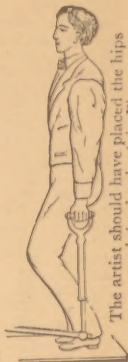
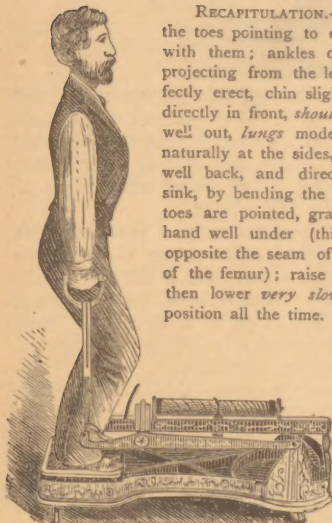


Fig. 4.
Correct.

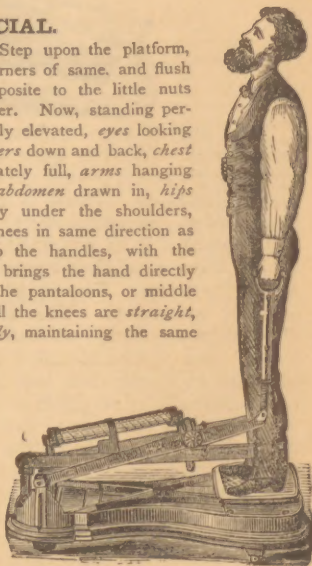
The artist should have placed the hips much further back in Fig. 4.

SPECIAL.

RECAPITULATION.—Step upon the platform, the toes pointing to corners of same, and flush with them; ankles opposite to the little nuts projecting from the lever. Now, standing perfectly erect, chin slightly elevated, *eyes* looking directly in front, *shoulders* down and back, *chest* well out, *lungs* moderately full, *arms* hanging naturally at the sides, *abdomen* drawn in, *hips* well back, and directly under the shoulders, sink, by bending the knees in same direction as toes are pointed, grasp the handles, with the hand well under (this brings the hand directly opposite the seam of the pantaloons, or middle of the femur); raise till the knees are *straight*, then lower *very slowly*, maintaining the same position all the time.



READY TO LIFT



LIFTED.

Only correct figure

WEIGHTS TO BE LIFTED.

CUMULATIVE EXERCISE brings the Muscles into action *cumulatively*, by a series of definitely increased efforts—beginning with the lightest weight of a series, and ending with the heaviest.

The terms of the series of any Weight, from 20 to 1200 lbs., will be found in the subjoined Table.

Directions.—*Rest one or two minutes after the First Lift; two or three minutes after the Second; and three or four after the Third Lift.*

The first weight of each day's exercise should be one-half the final effort; the second, three-fourths; the third, nine-tenths; after which make the supreme effort with the full amount. Example: Weight to be lifted, 500 lbs.; 1st Lift, 250; 2d Lift, 375; 3d Lift, 450; final, 500. Ladies in health begin with about 50 lbs. as the final effort. Gentlemen in health begin with about 250 lbs. as the final effort. Ladies increase 5 lbs. daily. Gentlemen increase 10 lbs. daily from 200 to 300; 5 lbs. daily from 300 to 400; 5 lbs. every other day from 400 to 500, or make daily additions according to the subjoined Table.

LADIES.—4 Grades. 20 to 250 lbs.

To Lift	Begin with	2d Lift	3d Lift	4th Lift	To Lift	Begin with	2d Lift	3d Lift	4th Lift	To Lift	Begin with	2d Lift	3d Lift	4th Lift
20	20	20	20	20	100	50	75	95	100	180	90	135	170	180
25	20	20	20	25	105	55	80	100	105	185	95	140	175	185
30	20	20	25	30	110	55	85	105	110	190	95	145	180	190
35	20	25	30	35	115	60	90	110	115	195	100	150	180	195
40	20	30	35	40	120	60	90	110	120	200	100	150	185	200
45	25	35	40	45	125	65	95	115	125	205	105	155	190	205
50	25	35	45	50	130	65	100	120	130	210	105	160	195	210
55	25	40	50	55	135	70	105	125	135	215	110	165	200	215
60	30	45	55	60	140	70	105	130	140	220	110	165	205	220
65	35	50	60	65	145	75	110	135	145	225	115	170	210	225
70	35	55	65	70	150	75	115	140	150	230	115	175	215	230
75	40	60	70	75	155	80	120	145	155	235	120	180	220	235
80	40	60	75	80	160	80	120	150	160	240	120	180	225	240
85	45	65	80	85	165	85	125	155	165	245	125	185	230	245
90	45	70	85	90	170	85	130	160	170	250	125	190	235	250
95	50	75	90	95	175	90	135	165	175					

GENTLEMEN.—4 Grades. 200 to 500 lbs.

To Lift	Begin with	2d Lift	3d Lift	4th Lift	To Lift	Begin with	2d Lift	3d Lift	4th Lift	To Lift	Begin with	2d Lift	3d Lift	4th Lift
200	100	150	180	200	335	170	255	315	335	420	210	315	395	420
210	105	160	190	210	340	170	255	320	340	425	215	320	400	425
220	110	165	200	220	345	175	260	325	345	430	215	325	405	430
230	120	175	210	230	350	175	265	330	350	435	220	330	410	435
240	120	180	220	240	355	180	270	335	355	440	220	330	415	440
250	130	190	230	250	360	180	270	340	360	445	225	335	420	445
260	130	195	240	260	365	185	275	345	365	450	225	340	425	450
270	140	200	250	270	370	185	280	350	370	455	230	345	430	455
280	140	210	260	280	375	190	285	355	375	460	230	345	435	460
290	150	220	260	290	380	190	285	360	380	465	235	350	440	465
300	150	230	270	300	385	195	290	365	385	470	235	355	445	470
305	155	230	285	305	390	195	295	370	390	475	240	360	450	475
315	155	235	290	310	395	200	300	375	395	480	240	360	455	480
315	160	240	295	315	400	200	300	375	400	485	245	365	460	485
320	160	240	300	320	405	205	305	380	405	490	245	370	465	490
325	165	245	305	325	410	205	310	385	410	495	250	375	470	495
330	165	250	310	330	415	210	315	390	415	500	250	375	470	500

GENTLEMEN.—5 Grades. 500 to 750 lbs.

To Lift	Begin with	2d Lift	3d Lift	4th Lift	5th Lift	To Lift	Begin with	2d Lift	3d Lift	4th Lift	5th Lift
500	250	375	440	480	500	545	275	410	480	525	545
505	255	380	445	485	505	550	275	415	485	530	550
510	255	385	450	490	510	555	280	420	490	535	555
515	260	390	455	495	515	560	280	420	490	540	560
520	260	390	455	500	520	565	285	425	495	545	565
525	265	395	460	505	525	570	285	430	500	550	570
530	265	400	465	510	530	575	290	435	505	555	575
535	270	405	470	515	535	580	290	435	510	560	580
540	270	405	475	520	540	585	295	440	515	565	585

GENTLEMEN.—5 Grades. 500 to 750 lbs.—Continued.

To Lift	Begin with	2d Lift	3d Lift	4th Lift	5th Lift
590	295	445	520	570	590
595	300	450	525	575	595
600	300	450	525	575	600
605	305	455	530	580	605
610	305	460	535	585	610
615	310	465	540	590	615
620	310	465	545	595	620
625	315	470	550	600	625
630	315	475	555	605	630
635	320	480	560	610	635
640	320	480	560	615	640
645	325	485	565	620	645
650	325	490	570	625	650
655	330	495	575	630	655
660	330	495	580	635	660
665	335	500	585	640	665
670	335	505	590	645	670

To Lift	Begin with	2d Lift	3d Lift	4th Lift	5th Lift
675	340	510	595	650	675
680	340	510	595	655	680
685	345	515	600	660	685
690	345	520	605	665	690
695	350	525	610	670	695
700	350	525	615	670	700
705	355	530	620	675	705
710	355	535	625	680	710
715	360	540	630	685	715
720	360	540	630	690	720
725	365	545	635	695	725
730	365	550	640	700	730
735	370	550	645	705	735
740	370	555	650	710	740
745	375	560	655	715	745
750	375	565	660	720	750

GENTLEMEN.—6 Grades. 750 to 1200 lbs.

To Lift	Begin with	2d Lift	3d Lift	4th Lift	5th Lift	6th Lift
750	375	565	660	705	735	750
755	380	570	665	710	740	755
760	380	570	665	715	745	760
765	385	575	670	720	750	765
770	385	580	675	725	755	770
775	390	585	680	730	760	775
780	390	585	685	735	765	780
785	395	590	690	740	770	785
790	395	595	695	745	775	790
795	400	600	700	750	780	795
800	400	600	700	750	785	800
805	405	605	705	755	790	805
810	405	610	710	760	795	810
815	410	615	715	765	800	815
820	410	615	720	770	805	820
825	415	620	725	775	810	825
830	415	625	730	780	815	830
835	420	630	735	785	820	835
840	420	630	735	790	825	840
845	425	635	740	795	830	845
850	425	640	745	800	835	850
855	430	645	750	805	840	855
860	430	645	755	810	845	860
865	435	650	760	815	850	865
870	435	655	765	820	855	870
875	440	660	770	825	860	875
880	440	660	770	825	865	880
885	445	665	775	830	870	885
890	445	670	780	835	875	890
895	450	675	785	840	880	895
900	450	675	790	845	880	900
905	455	680	795	850	885	905
910	455	685	800	855	890	910
915	460	690	805	860	895	915
920	460	690	805	865	900	920
925	465	695	810	870	905	925
930	465	700	815	875	910	930
935	470	705	820	880	915	935
940	470	705	825	885	920	940
945	475	710	830	890	925	945
950	475	715	835	895	930	950
955	480	720	840	900	935	955
960	480	720	840	900	940	960
965	485	725	845	905	945	965
970	485	730	850	910	950	970
975	490	735	855	915	955	975

To Lift	Begin with	2d Lift	3d Lift	4th Lift	5th Lift	6th Lift
980	490	735	860	920	960	980
985	495	740	865	925	965	985
990	495	745	870	930	970	990
995	500	750	875	935	975	995
1000	500	750	880	940	980	1000
1005	505	755	885	945	985	1005
1010	505	760	890	950	990	1010
1015	510	765	895	955	995	1015
1020	510	765	895	960	1000	1020
1025	515	770	900	965	1005	1025
1030	515	775	905	970	1010	1030
1035	520	780	910	975	1015	1035
1040	520	780	910	975	1020	1040
1045	525	785	915	980	1025	1045
1050	525	790	920	985	1030	1050
1055	530	795	925	990	1035	1055
1060	530	795	930	995	1040	1060
1065	535	800	935	1000	1045	1065
1070	535	805	940	1005	1050	1070
1075	540	810	945	1010	1055	1075
1080	540	810	945	1015	1060	1080
1085	545	815	950	1020	1065	1085
1090	545	820	955	1025	1070	1090
1095	550	825	960	1030	1075	1095
1100	550	825	965	1035	1080	1100
1105	555	830	970	1040	1085	1105
1110	555	835	975	1045	1090	1110
1115	560	840	980	1050	1095	1115
1120	560	840	980	1050	1100	1120
1125	565	845	985	1055	1105	1125
1130	565	850	990	1060	1110	1130
1135	570	855	995	1065	1115	1135
1140	570	855	1000	1070	1120	1140
1145	575	860	1005	1075	1125	1145
1150	575	865	1010	1080	1130	1150
1155	580	870	1015	1085	1135	1155
1160	580	870	1015	1090	1140	1160
1165	585	875	1020	1095	1145	1165
1170	585	880	1025	1100	1150	1170
1175	590	885	1030	1105	1155	1175
1180	590	885	1035	1110	1160	1180
1185	595	890	1040	1115	1165	1185
1190	595	895	1045	1120	1170	1190
1195	600	900	1050	1125	1175	1195
1200	600	900	1050	1125	1180	1200

The 5 grades and 6 grades are given for choice, and not necessity. Many prefer 4 grades even for heavy lifts, and seem to derive fully as great benefit.